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Assistant Commissioner for Patents,  
Washington, D.C. 20231,  
On April 5, 2000

The Law Offices of Jonathan Alan Quine

By Alexandra Allison  
Alexandra Allison

Attorney Docket No. 02-025630US  
Client Ref. No. 0113.004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Venkiteswaran Subramanian, *et al.*

Application No.: 09/373,333

Filed: August 12, 1999

For: DNA SHUFFLING TO PRODUCE  
HERBICIDE SELECTIVE CROPS

Examiner: Unassigned

Art Unit: Unassigned

INFORMATION DISCLOSURE  
STATEMENT UNDER 37 CFR § 1.97 and  
§ 1.98

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

The references cited on the attached PTO-1449 form are being called to the attention of the Examiner. Copies of the references are enclosed. As some of the references cited in the enclosed PTO1449 form are from the International Search Report dated January 28, 2000, for PCTUS99/18394, a copy is enclosed for your reference.

Applicant believes that no fee is required for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the

Application No.: 09/373,333  
Page 2

Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 50-0893. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,



Jonathan Alan Quine  
Reg. No. 41,261

THE LAW OFFICES OF JONATHAN ALAN QUINE  
P.O. Box 458  
Alameda, CA 94501  
Tel: (510) 337-7871  
Fax: (510) 337-7877

JAQ:afa

JUL 2 2002 3:47PM

NO. 6846 P. 16

(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>	<b>Complete if Known</b>	
	Application Number	<b>09/373,333</b>
	Filing Date	<b>August 12, 1999</b>
	First Named Inventor	<b>Venkiteswatan Subramanian</b>
	Group Art Unit	<b>Unassigned</b>
	Examiner Name	<b>Unassigned</b>
	Attorney Docket Number	<b>02-025630US</b>

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
	AA	5,512,463		Stemmer	04-30-1996	
	AB	5,514,588		Varadaraj	05-07-1996	
	AC	5,605,793		Stemmer	02-25-1997	
	AD	5,763,239		Short et al.	06-09-1998	
	AE	5,789,228		Lam et al.	08-04-1998	
	AF	5,811,238		Stemmer et al.	09-22-1998	
	AG	5,814,473		Warren et al.	09-29-1998	
	AH	5,830,696		Short	11-03-1998	
	AI	5,830,721		Stemmer et al.	11-03-1998	
	AJ	5,834,252		Stemmer et al.	11-10-1998	
	AK	5,837,458		Minushull et al.	11-17-1998	
	AL	5,876,997		Kretz	03-02-1999	
	AM	5,925,749		Mathur, et al.	07-20-1999	
	AN	5,928,905		Stemmer, et al.	07-27-1999	
	AO	5,939,250		Short, Jay M.	08-17-1999	
	AP	5,939,300		Robertson, et al.	08-17-1999	
	AQ	5,942,430		Robertson, et al.	08-24-1999	
	AR	5,948,666		Callen, et al.	09-07-1999	
	AS	5,958,672		Short, Jay M.	09-28-1999	
	AT	5,958,751		Murphy, et al.	09-28-1999	
	AU	5,962,258		Mathur, et al.	10-05-1999	
	AV	5,962,283		Warren et al.	10-05-1999	
	AW	5,965,408		Short, Jay M.	10-12-1999	
	AX	5,985,646		Murphy, et al.	11-16-1999	

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

. Received from < > at 7/2/02 7:30:54 PM [Eastern Daylight Time]

NO. 6846 P. 17

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NO. 6846 P. 18

(Modified) PTO/GB05A-B (10-95)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form PTO/GB05A-B (PTO)		Complete if Known	
INFORMATION DISCLOSURE		Application Number	09/373,333
Received from < > at 7/2/02 7:30:54 PM (Eastern Daylight Time)		Filing Date	August 12, 1999
		Inventor	Venkateswari Subramanian
			Unassigned

JUL 2 2002 3:47PM

NO. 6846 P. 19

(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use as many sheets as necessary)	Complete if Known	
	Application Number	09/373,333
	Filing Date	August 12, 1999
	First Named Inventor	Venkiteswatan Subramanian
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-025630US

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
	CT	LEE, K.Y., et al, May 1990, "Homologous recombination in plant cells after Agrobacterium-mediated transformation" PLANT CELL, Vol. 2 p. 415-425, XP002128868	
	CU	ENGELS, P., et al., 1992, "Comparison of homologous recombination frequencies in somatic cells of petunia and tobacco suggest two distinct recombination pathways" THE PLANT JOURNAL, vol. 2, no. 1, p. 59-67, XP002128869	
	CV	Mourad, G., et al., 1994, "Intragenic recombination in the CSR1 locus of Arabidopsis" MOL. GEN. GENET, vol. 243, p. 178-184, XP002128867	
	CW	MAJUMDER, K., et al, "Background-minimized cassette mutagenesis by PCR using cassette-specific selection markers: a useful general approach for studying structure-function relationships of multisubstrate enzymes" PCR METHODS AND APPLICATIONS, vol. 4, p. 212-218, XP002128870	
	CX	CRAMERI, A., et al, January 1998, "DNA shuffling of a family of genes from diverse species accelerated directed evolution" NATURE, GB, MACMILLAN JOURNALS LTD. vol. 391, p. 288-291, XP000775869	

Examiner Signature		Date Considered	
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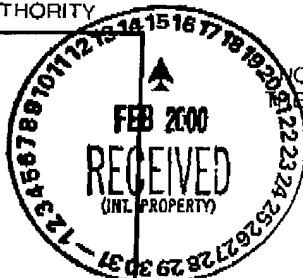
\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:  
 MAXYGEN, INC.  
 Attn: PETITHORY, J.  
 515 Galveston Drive  
 Redwood City, California 94063  
 UNITED STATES OF AMERICA



NOTIFICATION OF TRANSMITTAL OF  
 THE INTERNATIONAL SEARCH REPORT  
 OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing (day/month/year)		11/02/2000
Applicant's or agent's file reference 0113.100		FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US 99/18394		International filing date (day/month/year) 12/08/1999
Applicant MAXYGEN, INC.		

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland  
 Facsimile No.: (41-22) 740.14.35

DOCKETED on/by 7/5 100

Atty. SMF PA

File # 0113.100

For more detailed instructions, see the notes on the accompanying sheet.

Due Date — Ext —

Final Date 3/2/00 RSD-0 (Definitive)

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2  
 NL-2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Mireille Claudepierre

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>0113.100</b>	<b>FOR FURTHER ACTION</b> <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. <b>PCT/US 99/18394</b>	International filing date (day/month/year) <b>12/08/1999</b>	(Earliest) Priority Date (day/month/year) <b>12/08/1998</b>
Applicant  <b>MAXYGEN, INC.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☒ furnished subsequently to this Authority in written form.

☒ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☒ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

**4. With regard to the title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

**5. With regard to the abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. The figure of the drawings to be published with the abstract is Figure No.**

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.



## INTERNATIONAL SEARCH REPORT

 International Application No.  
 PCT/US 99/18394

 A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 C12N15/82 C12N15/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

 Minimum documentation searched (classification system followed by classification symbols)  
 IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 31837 A (DELCARDAYRE STEPHEN B ; MAXYGEN INC (US); MINSHULL JEREMY (US); NES) 23 July 1998 (1998-07-23) page 28, line 19 -page 31, line 37	1-60
X	WO 98 31816 A (MINSHULL JEREMY S ; SOUZA MERVYN L DE (US); UNIV MINNESOTA (US); SA) 23 July 1998 (1998-07-23) the whole document	1-3, 28, 30, 35, 37
X	MOURAD, G., ET AL.: "Intragenic recombination in the CSR1 locus of Arabidopsis" MOL. GEN. GENET., vol. 243, 1994, pages 178-184, XP002128867 the whole document	1

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Z" document member of the same patent family

Date of the actual completion of the international search

28 January 2000

Date of mailing of the international search report

11/02/2000

Name and mailing address of the ISA

 European Patent Office, P.O. 5818 Patentean 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 81 651 apo nl,  
 Fax: (+31-70) 340-3018

Authorized officer

Maddox, A

## INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/US 99/18394

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LEE, K.Y., ET AL.: "Homologous recombination in plant cells after Agrobacterium-mediated transformation" PLANT CELL, vol. 2, May 1990 (1990-05), pages 415-425, XP002128868 the whole document	1
X	ENGELS, P., ET AL.: "Comparison of homologous recombination frequencies in somatic cells of petunia and tobacco suggest two distinct recombination pathways" THE PLANT JOURNAL, vol. 2, no. 1, 1992, pages 59-67, XP002128869 the whole document	1
P,X	WO 99 07865 A (KIMERAGEN INC) 18 February 1999 (1999-02-18) the whole document	1
P,X	WO 98 54330 A (EVANS IAN JEFFREY ;HAWKES TIMOTHY ROBERT (GB); ZENECA LTD (GB); GR) 3 December 1998 (1998-12-03) the whole document	1
P,X	WO 99 25853 A (BASZCZYNSKI CHRISTOPHER L ;PIONEER HI BRED INT (US); DUESING JOHN) 27 May 1999 (1999-05-27) the whole document	1
A	MAJUMDER, K., ET AL.: "Background-minimized cassette mutagenesis by PCR using cassette-specific selection markers: a useful general approach for studying structure-function relationships of multisubstrate enzymes" PCR METHODS AND APPLICATIONS, vol. 4, 1995, pages 212-218, XP002128870 the whole document	21,22, 47,48
A	CRAMERI A ET AL: "DNA SHUFFLING OF A FAMILY OF GENES FROM DIVERSE SPECIES ACCELERATES DIRECTED EVOLUTION" NATURE, GB, MACMILLAN JOURNALS LTD. LONDON, vol. 391, 15 January 1998 (1998-01-15), pages 288-291, XP000775869 ISSN: 0028-0836 the whole document	1-60
A	WO 97 35966 A (MAXYGEN INC ;MINSHULL JEREMY (US); STEMMER WILLEM P C (US)) 2 October 1997 (1997-10-02) page 30, line 25 -page 31, line 30	1-60
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NO. 6846 P. 25

INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 99/18394

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 20078 A (AFFYMAX TECH NV ; CRAMER ANDREAS (US); STEMMER WILLEM P C (US)) 5 June 1997 (1997-06-05) the whole document	I-60
A	WO 98 27230 A (MAXYGEN INC ; PATTEN PHILLIP A (US); STEMMER WILLEM P C (US)) 25 June 1998 (1998-06-25) the whole document	I-60
A	WO 92 06201 A (MONSANTO CO) 16 April 1992 (1992-04-16) the whole document	21,22, 47,48
A	EP 0 293 358 A (MONSANTO CO) 30 November 1988 (1988-11-30) the whole document	21,22, 47,48